

Species		Historic range	Status	When listed	Critical habitat	Special rules
Scientific name	Common name					
Lamiaceae-Mint family:						
<i>Dicerandra christmanii</i>	Garrett's mint.....	U.S.A. (FL).....	E	207,361	NA	NA
<i>Dicerandra frutescens</i>	Scrub mint.....	U.S.A. (FL).....	E	207,361	NA	NA

Dated: September 11, 1989.

David L. Olsen,
Acting Director, Fish and Wildlife Service.

[FR Doc. 89-22337 Filed 9-20-89; 8:45 am]

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50 CFR Part 17

RIN 1018-AB 23

Endangered and Threatened Wildlife and Plants; Small Anthered Bittercress Determined To Be Endangered

AGENCY: Fish and Wildlife Service.
Interior.

ACTION: Final rule.

SUMMARY: The Service Determines *Cardamine micranthera* (small-anthered bittercress), a perennial herb limited to four populations in North Carolina, to be an endangered species under the authority of the Endangered Species Act of 1973, as amended (Act). *Cardamine micranthera* is endemic to Stokes and Forsyth Counties, North Carolina, and is endangered by conversion of habitat for agricultural and silvicultural purposes, floods, stream channelization and impoundment, and encroachment of exotic plants. This action implements Federal protection provided by the Act for *Cardamine micranthera*.

EFFECTIVE DATE: October 23, 1989.

ADDRESSES: The complete file for this rule is available for inspection, by appointment, during normal business hours at the U.S. Fish and Wildlife Service, 100 Otis Street, Room 224, Asheville, North Carolina 28801.

FOR FURTHER INFORMATION CONTACT: Ms. Nora Murdock, at the above address (704/259-0321 or FTS 672-0321).

SUPPLEMENTARY INFORMATION:

Background

Cardamine micranthera, first described by R. C. Rollins (1940) from material collected in North Carolina in 1939, is an erect, slender, perennial herb with fibrous roots and one (or rarely more) simple or branched stem growing 2 to 4 decimeters tall. Basal leaves are 1 to 2 centimeters (cm) long, 0.5 to 0.6 cm

wide, crenate, with one (or rarely two) pair of small lateral lobes. The stem leaves are alternate and mostly unlobed, 1 to 1.5 cm long, crenate and cuneate. Flowers and fruits are borne in April and May. The flowers, subtended by leafy bracts, have four white petals, six stamens, and small, round anthers. The fruit is a silique 0.8 to 1.2 cm long and approximately 1 millimeter (mm) in diameter with a beak 1 to 1.2 mm long. The brown seeds are approximately 1 mm long.

Cardamine micranthera can be distinguished from its most similar relative, *Cardamine rotundifolia*, by its much smaller, nearly orbicular (instead of oblong) anthers, smaller flowers, and more angulate leaves. In *Cardamine micranthera* the anthers are about 0.5 mm long, and the petals are 1.2 to 2 mm wide; whereas in *Cardamine rotundifolia*, the narrowly oblong anthers measure from 1.2 to 1.8 mm long, and the petals are 2.5 to 3.5 mm wide. Growth habits of the two species differ as well. *Cardamine rotundifolia* has decumbent stems with proliferating branches arising both from the main axis and often from the inflorescences. *Cardamine micranthera* has erect or only basally decumbent stems with no proliferating branches. Also, the siliques and styles of *Cardamine micranthera* are only about half as long as those of *Cardamine rotundifolia* (Rollins 1940, Cooper *et al.* 1977, Radford *et al.* 1964).

Cardamine micranthera is endemic to seepages, streambanks, and moist woods along a few small streams in Stokes and Forsyth Counties, North Carolina. The single population in Forsyth County was destroyed when the site was converted to cattle pasture in the early 1960s. Repeated searches for the single population known at that time from Stokes County were unsuccessful, and the species was presumed extinct (Cooper *et al.* 1977). In 1985, nearly 30 years after the species had last been seen, it was again located in Stokes County by S. W. Leonard (1986). Subsequent searches by A. Weakley (North Carolina Natural Heritage Program) and N. Murdock (Service) resulted in the discovery of three more populations in Stokes County. All four remaining populations are located on

privately owned lands. The continued existence of this species is threatened by conversion of its habitat to pasture, habitat destruction and/or desiccation associated with logging, encroachment by aggressive nonnative species such as Japanese honeysuckle *Lonicera japonica* Thunberg), impoundment or channelization of the small stream corridors it occupies, and flooding and associated scouring of its streambank habitat.

The remaining populations are small in numbers of plants and extent of occupied habitat. The smallest population consists of only 3 plants; the largest, consisting of about 200 plants, occupies less than a tenth of a mile of streambank. With all four remaining sites in private ownership, the species is extremely vulnerable to extirpation resulting from habitat alteration.

Federal government actions on this species began with section 12 of the Endangered Species Act of 1973, which directed the Secretary of the Smithsonian Institution to prepare a report on those plants considered to be endangered, threatened, or extinct. This report, designated as House Document Number 94-51, was presented to Congress on January 9, 1975. The Service published a notice in the July 1, 1975, *Federal Register* (40 FR 27832) of its acceptance of the Smithsonian Institution report as a petition within the context of section 4(c)(2) (now section 4(b)(3)) of the Act and of its intention thereby to review the status of the plant taxa named within. *Cardamine micranthera* was included in the July 1, 1975, notice of review. On December 15, 1980, the Service published a revised notice of review for native plants in the *Federal Register* (45 FR 82480). *Cardamine micranthera* was included in that notice as a category 1 species. Category 1 species are those species for which the Service currently has on file substantial information on biological vulnerability and threats to support proposing to list them as endangered or threatened species. A revision of the 1980 notice that maintained *Cardamine micranthera* in this category was published on September 27, 1985 (50 FR 39526).

Section 4(b)(3)(B) of the Endangered Species Act, as amended in 1982, requires the Secretary to make certain findings on pending petitions within 12 months of their receipt. Section 2(b)(1) of the 1982 amendments further requires that all petitions pending on October 13, 1982, be treated as having been newly submitted on that date. This is the case for *Cardamine micranthera* because of the acceptance of the 1975 Smithsonian report as a petition. In October of 1983, 1984, 1985, 1986, and 1987, the Service found that the petitioned listing of *Cardamine micranthera* was warranted but precluded by other listing actions of a higher priority and that additional data on vulnerability and threats was still being gathered. The February 1, 1989, proposal of *Cardamine micranthera* to be endangered (54 FR 5095) constituted the final 12-month finding for this species.

Summary of Comments and Recommendations

In the February 1, 1989, proposed rule and associated notifications, all interested parties were requested to submit factual reports or information that might contribute to the development of a final rule. Appropriate State agencies, county governments, Federal agencies, scientific organizations, and other interested parties were contacted and requested to comment. A newspaper notice inviting public comment was published in the "Danbury Reporter" on February 22, 1989.

Four comments were received, all of which expressed support for the proposal.

Summary of Factors Affecting the Species

After a thorough review and consideration of all information available, the Service has determined that *Cardamine micranthera* should be classified as an endangered species. Procedures found at section 4(a)(1) of the Endangered Species Act (16 U.S.C. 1531 *et seq.*) and regulations (50 CFR part 424) promulgated to implement the listing provisions of the Act were followed. A species may be determined to be an endangered or threatened species due to one or more of the five factors described in section 4(a)(1). These factors and their application to *Cardamine micranthera* Rollins (small-antlered bittercress) are as follows:

A. *The present or threatened destruction, modification, or curtailment of its habitat or range.* Four populations of *Cardamine micranthera* are known to exist in Stokes County, North Carolina. One other historically known population

has been extirpated due to conversion of the habitat to cattle pasture. The four remaining populations are located in privately owned lands and are small and extremely vulnerable to extirpation. Activities that could further threaten the continued existence of *Cardamine micranthera*, if not undertaken in a manner consistent with protection of the species, include impoundment, channelization, conversion of the habitat to pasture, logging, encroachment of exotic species such as *Lonicera japonica*, and flooding (which will be discussed in detail under Factor E below).

B. *Overutilization for commercial, recreational, scientific, or educational purposes.* *Cardamine micranthera* is not currently a significant component of the commercial trade in native plants. However, because of its small and easily accessible populations, it is vulnerable to taking and vandalism that could result from increased specific publicity.

C. *Disease or predation.* Not applicable to this species at this time.

D. *The inadequacy of existing regulatory mechanisms.* On September 1, 1989, *Cardamine micranthera* was added as an endangered species to the State list of endangered species in North Carolina (R. Sutter, North Carolina Plant Protection Program, personal communication, 1989). The plant is afforded legal protection in that State by North Carolina General Statutes, sections 106-202.12 to 106-202.19, which provide for protection from intrastate trade (without a permit), monitoring and management of State-listed species, and prohibition against taking plants without written permission of landowners. State prohibitions against taking are difficult to enforce and do not cover adverse alterations of habitat, such as channelization, impoundment, or conversion for agricultural or silvicultural use. Section 404 of the Federal Water Pollution Control Act could potentially provide some protection for the habitat of *Cardamine micranthera*; however, most, if not all, of the sites where it occurs do not meet the wetlands criteria of the Federal Water Pollution Control Act. The Endangered Species Act would provide additional protection and encouragement of active management for *Cardamine micranthera*.

E. *Other natural or manmade factors affecting its continued existence.* As mentioned in the "Background" section of this final rule, the four remaining populations of this species are small in numbers of individual stems and in area covered by the plants. In some cases aggressive exotic species such as

Lonicera japonica have invaded adjacent areas and threaten to invade this species' habitat, which could result in the elimination of *Cardamine micranthera*. The natural habitat of this species consists of small streambank seeps and, secondarily, adjacent sandbars and stream edges. At one of the remaining populations, the original seep habitat can no longer be found, and the surviving plants now exist only in the streambed on two small sandbars. In this situation, the species is highly vulnerable to natural catastrophes such as floods, which could scour the streambed and eliminate the few remaining plants. In unaltered habitat, where most of the plants occupy the seepages above the actual stream channel, flooding and scouring of the streambed is not as potentially threatening to the species as in altered habitats. In unaltered habitats, scoured areas where plants have been eliminated are readily recolonized by the populations in the seeps.

The Service has carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by this species in determining to make this rule final. Based on this evaluation, the preferred action is to list *Cardamine micranthera* as endangered. With only four populations remaining in existence (one having already been eliminated) and with all the remaining populations being small, highly vulnerable, and located in privately owned land, the species definitely warrants protection under the Act. Endangered status seems appropriate because of the imminent serious threats facing the four remaining populations. Critical habitat is not being designated for the reasons discussed below.

Critical Habitat

Section 4(a)(3) of the Act requires, to the maximum extent prudent and determinable, that the Secretary designate critical habitat at the time a species is determined to be endangered or threatened. The Service finds that designation of critical habitat is not presently prudent for this species. As discussed under Factor B in the "Summary of Factors Affecting the Species" section, *Cardamine micranthera* is threatened by taking and vandalism. These activities are difficult to enforce against and only regulated by the Act with respect to plants in cases of (1) removal and reduction to possession of listed plants from lands under Federal jurisdiction, or their malicious damage or destruction on such lands; and (2) removal, cutting, digging up, or

damaging or destroying in knowing violation of any State law or regulation, including State criminal trespass law. None of the remaining populations of this species occurs on Federal lands, and in any case such provisions are difficult to enforce. Publication of critical habitat descriptions and maps would make *Cardamine micranthera* more vulnerable and increase enforcement problems. All involved parties and principal landowners have been notified of the location and importance of protecting this species' habitat. Protection of this species' habitat will be addressed through the recovery process and through the section 7 jeopardy standard. Therefore, it would not now be prudent to determine critical habitat for *Cardamine micranthera*.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Endangered Species Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing encourages and results in conservation actions by Federal, State, and private agencies, groups, and individuals. The Act provides for possible land acquisition and cooperation with the States and requires that recovery actions be carried out for all listed species. Such actions are initiated by the Service following listing. The protection required of Federal agencies and the prohibitions against certain activities involving listed plants are discussed, in part, below.

Section 7(a) of the Act, as amended, requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened and with respect to its critical habitat if any is being designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402. Section 7(a)(2) requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of a listed species or to destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter

into formal consultation with the Service.

Federal activities that could impact *Cardamine micranthera* and its habitat in the future include, but are not limited to, channelization of streams, construction of impoundments, and issuance of permits for mineral exploration and mining. The Service will work with the involved agencies to secure protection and proper management of *Cardamine micranthera* while accommodating agency activities to the extent possible.

The Act and its implementing regulations found at 50 CFR 17.61, 17.62, and 17.63 set forth a series of general trade prohibitions and exceptions that apply to all endangered plants. All trade prohibitions of section 9(a)(2) of the Act, implemented by 50 CFR 17.61, apply. These prohibitions, in part, make it illegal for any person subject to the jurisdiction of the United States to import or export, transport in interstate or foreign commerce in the course of a commercial activity, sell or offer for sale this species in interstate or foreign commerce, or to remove and reduce to possession the species from areas under Federal jurisdiction. In addition, for listed plants, the 1988 amendments (Pub. L. 100-478) to the Act prohibit the malicious damage or destruction on Federal lands and the removal, cutting, digging up, or damaging or destroying of listed plants in knowing violation of any State law or regulation, including State criminal trespass law. Certain exceptions apply to agents of the Service and State conservation agencies. The Act and 50 CFR 17.62 and 17.63 also provide for the issuance of permits to carry out otherwise prohibited activities involving endangered species under certain circumstances. It is anticipated that few trade permits would ever be sought or issued, since *Cardamine micranthera* is not common in cultivation or in the wild. Requests for copies of the regulations on plants and inquiries regarding them may be addressed to the Office of Management Authority, U.S. Fish and Wildlife Service, P.O. Box 3507, Arlington, Virginia 22203 (703/358-2164).

National Environmental Policy Act

The Fish and Wildlife Service has determined that an environmental assessment, as defined under the

authority of the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to section 4(a) of the Endangered Species Act of 1973, as amended. A notice outlining the Service's reasons for this determination was published in the Federal Register on October 25, 1983 (48 FR 49244).

References Cited

- Cooper, J., S. Robinson, and J. Funderburg. 1977. Endangered and threatened plants and animals of North Carolina; proceedings of the symposium on endangered and threatened biota of North Carolina. North Carolina State Museum of Natural History, Raleigh, North Carolina. Pp. 101-102.
- Leonard, S. 1966. Pursuing the small-anthered bittercress. North Carolina Wildflower Preservation Society, Spring Newsletter. Pp. 8-10.
- Radford, A., H. Ahles, and C. Bell. 1964. Manual of the vascular flora of the Carolinas. UNC Press, Chapel Hill. Pp. 507-508.
- Rollins, R.C. 1940. A new *Cardamine* from North Carolina. Castanea 5(5):87-88.

Author

The primary author of this final rule is Ms. Nora Murdock, Asheville Field Office, U.S. Fish and Wildlife Service, 100 Otis Street, Room 224, Asheville, North Carolina 28801 (704/259-0321 or FTS 672-0321).

List of Subjects in 50 CFR Part 17

Endangered and threatened wildlife, Fish, Marine mammals, Plants (agriculture).

Regulation Promulgation

Accordingly, part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, is amended as set forth below:

PART 17—[AMENDED]

1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361-1407; 16 U.S.C. 1531-1543; 16 U.S.C. 4201-4245; Pub. L. 99-625, 100 Stat. 3500; unless otherwise noted.

2. Amend § 17.12(h) by adding the following, in alphabetical order under the family Brassicaceae, to the List of Endangered and Threatened Plants:

§ 17.12 Endangered and threatened plants.

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(h) * * *

Species		Historic range	Status	When listed	Critical habitat	Special rules
Scientific name	Common name					
Brassicaceae—Mustard family						
<i>Cardamine micranthera</i>	Small-anthered bittercress.....	U.S.A. (NC).....	E		362 NA	NA

Dated: September 11, 1989.

David L. Olsen,

Acting Director, Fish and Wildlife Service.

[FR Doc. 89-22338 Filed 9-20-89; 8:45 am]

BILLING CODE 4310-55-M

50 CFR Part 17

Endangered and Threatened Wildlife and Plants; Endangered Status for Queen Alexandra's Birdwing Butterfly

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: The Service determines endangered status for Queen Alexandra's birdwing butterfly (*Troides* (= *Ornithoptera*) *alexandrae*). This species, the world's largest butterfly, occurs only in a small part of Papua New Guinea, where it is rare and is losing its restricted forest habitat to logging and agricultural activity. This rule implements the protection of the Endangered Species Act of 1973, as amended, for this butterfly.

EFFECTIVE DATE: October 23, 1989.

ADDRESSES: The complete file for this rule is available for inspection, by appointment, from 8:00 a.m. to 4:00 p.m., Monday through Friday, at the Office of Scientific Authority, Room 750, 4401 Fairfax Drive, Arlington, Virginia.

FOR FURTHER INFORMATION CONTACT: Dr. Charles W. Dane, Chief, Office of Scientific Authority, Mail Stop: Arlington Square, Room 725, U.S. Fish and Wildlife Service, Washington, DC 20240 (703-358-1708 or FTS 358-1708).

SUPPLEMENTARY INFORMATION:

Background

Queen Alexandra's birdwing butterfly was discovered in 1906. Its distribution is restricted to primary and advanced secondary lowland rain forest in or near the Popondetta Plain, a small area in the Northern Province of Papua New Guinea (Collins and Morris 1985). For many years it was known scientifically as *Ornithoptera alexandrae*, but recently Miller (1987) synonymized the genus *Ornithoptera* with *Troides*.

Troides alexandrae is the largest butterfly in the world. The females have

a wingspan of up to 10 inches (250 millimeters) and are dark brown in color. The males have a wingspan of 6½ to 7½ inches (170 to 190 millimeters) and are light blue, yellow, green, and black (Collins and Morris 1985).

Because of its restricted range, the destruction of much of its habitat by human activity, and its commercial value, *T. alexandrae* has been classified as endangered by the International Union for Conservation of Nature (Collins and Morris 1985; Wells, Pyle, and Collins 1983). The IUCN's Species Survival Commission selected it as one of the 12 most endangered animals in the world (Fitter 1985). It also has been placed on Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora.

On March 30, 1988, the Service received a petition from Ms. Marion Kelly Murphy, requesting that *T. alexandrae* be added to the U.S. List of Endangered and Threatened Wildlife. On July 1, 1988, the Service made a finding that this petition had presented substantial information. The Service also gathered other information through its own status review of the species. In the Federal Register of March 1, 1989 (54 FR 8574), the Service announced its finding that listing of *T. alexandrae* was warranted and also issued a proposed rule to determine endangered status for the species. In that proposal, and associated notifications, all interested parties were requested to submit comments and information that might contribute to development of a final rule. No responses were received.

Summary of Factors Affecting the Species

After a thorough review and consideration of all information available, the Service has determined that Queen Alexandra's birdwing butterfly should be classified as endangered. Section 4(a)(1) of the Endangered Species Act (16 U.S.C. 1531 *et. seq.*) and regulations (50 CFR part 424) promulgated to implement the listing provisions of the Act were followed. A species may be determined to be an endangered or threatened species due to one or more of the five

factors described in section 4(a)(1). These factors and their application to Queen Alexandra's birdwing butterfly (*Troides alexandrae*) are as follows (information from Collins and Morris 1985).

A. The present or threatened destruction, modification, or curtailment of its habitat or range. The greatest current danger is the expanding oil palm industry in the Popondetta region of Papua New Guinea, though development of cocoa and rubber plantations has also been a problem. These activities eliminate the natural forest required by *T. alexandrae*, and have already claimed large tracts of its restricted habitat. Local disappearances of the species are occurring because of clearing of forest to make food gardens. Negotiations to exploit reserves of timber in the region are also underway.

B. Overutilization for commercial, recreational, scientific, or educational purposes. *T. alexandrae* is the world's largest butterfly and is aesthetically very attractive. Birdwing butterflies have long been held in high esteem by insect collectors and are in great demand worldwide. Species such as *T. alexandrae*, which are not only impressive, but restricted in range and hard to obtain, realize extremely high prices. Some illegal trade in *T. alexandrae* has undoubtedly occurred.

C. Disease or predation. Adults are subject to little predation, but eggs are attacked by ants and heteropterous bugs. The larvae are preyed upon by toads, lizards, and birds. Parasitism of larvae by unidentified flies, and of pupae by parasitic wasps, has been reported.

D. The inadequacy of existing regulatory mechanisms. *T. alexandrae* is completely protected from collection by the laws of Papua New Guinea, and a large wildlife management area has been established within its range, but it is not yet clear that these measures have helped prevent habitat loss, which is the main threat confronting the species.

E. Other natural or manmade factors affecting its continued existence. None now known.

The decision to determine endangered status for *T. alexandrae* was based on